

Wireless Jungle

and planning is now well underway at the FCC to re-license these stations, as well as "Class A" stations, TV translators and repeaters. In addition, all stations currently occupying channels 52 and higher will be required to relocate to lower channels.

One of the reasons the U.S. government pushed for the adoption of DTV is that analog channels have to be separated by one (or two in the high UHF range) empty channel(s). This is not necessary for DTV transmissions.

So, in theory, virtually every TV channel could be used in a particular area, and consequently, new stations licenses are certain to be granted. As a result, there will be no bonanza of vacant TV channels when the analog stations finally do go off the air.

It's clear that the computer industry sees this action as a veritable gold mine. Public comments from those quarters make it very clear that this opportunity will be pursued aggressively. Most likely, preliminary equipment development is already underway.

Add in a large increase in active TV stations and the picture will become quite ugly.

CONFUSED STATE

On top of all of this is the confused state of the DTV transition. To say that it has not been going as planned is an understatement. Broadcasters have resisted the change from the beginning, and consumer interest remains lukewarm – set prices remain high, and the cost of DTV-compatible tuners creates sticker shock for prospective buyers.

The film studios have also seriously muddied the water and greatly slowed things down with their demands for "pirate proof" tuners and sets.

In addition, the FCC may have made a major technical blunder in the DTV transmission standard selected. Even after the FCC approved a five-fold increase in maximum transmitter power, the coverage of DTV transmitters is generally still considerably less than for existing analog transmissions.

Reception with simple indoor antennas and even many outdoor antennas has also been unexpectedly poor. Therefore, if analog transmissions do end, broadcasters will lose large numbers of viewers, and many viewers will lose access to stations they have watched for years.

There is also the question of the expense. The government's plan was that low-income viewers would be able to buy very inexpensive converters to allow DTV reception on their current sets. But costs remain

far too high to make this feasible. The political implications are clear.

There has reportedly been talk in the halls of Congress about the possibility of the government just giving converters to families whose income is below some threshold. The numbers say that the added revenue received by the government would still far outweigh the costs of such a program.

For better or worse, Congress remains firmly committed to the DTV conversion. After all, most of the money has already been factored into future budgets and therefore "spent".

However, increasingly it seems possible that it just isn't going to work, at least not on the current 2006 timetable, for both technical and practical reasons. Then what?

BIG BLOWUP

A major political blowup seems entirely possible, with Congress flailing around trying to place the blame elsewhere, looking for quick fixes and reacting in anger and panic. What would happen then is anybody's guess.

The only certainties are that it would be ugly, highly political and hugely confused. And wireless mics would likely be the flea on the elephant path.

Because the impact of the DTV transition took so long to be really felt, many will assume that the same will be true in this case. However, with DTV, the broadcasters resisted and the public was basically uninterested.

Only the government was promoting a rapid changeover. In this case, very large and aggressive companies smell hefty profits and will push this as fast as it can go, so the problem is likely to arrive sooner than you might think.

So what's a "poor, downtrodden" entertainment wireless system user to do? A very good question. The problem is conflicting forces and so many uncertainties.

In addition, politics don't follow the usual rules of logic and reason. Of the many possible scenarios, most are unfavorable to wireless. One of the few that might not be? Digital wireless microphone systems. However, for technical reasons, the odds of that don't seem very good.

Federal Communications Commission	
FCC 04-113	
Before the Federal Communications Commission Washington, D.C. 20554	
In the Matter of:	1
Unlicensed Operation in the TV Broadcast Bands	1 E.T. Docket No. 04-188
Additional Spectrum for Unlicensed Devices (Below 900 MHz and in the 3 GHz Band)	1 E.T. Docket No. 04-280
NOTICE OF PROPOSED RULE MAKING	
Adopted:	Released:
By the Commission: Chairman Powell, Commissioners Copps and Adelstein issuing separate statements, Commissioner Martin concurring and issuing a statement.	
Comment date: [75 days from publication in Federal Register]	
Reply comment date: [105 days from publication in Federal Register]	
TABLE OF CONTENTS	
	Paragraph
INTRODUCTION	1
BACKGROUND	1
DISCUSSION	7
A. UNLICENSED OPERATION IN THE BROADCAST TV SPECTRUM	7
B. REQUIREMENTS FOR UNLICENSED USE OF THE TV BANDS	17
C. PROTECTION OF IMMEDIATE TELEVISION SERVICE	29
D. FEASIBLE CHANNELS FOR UNLICENSED OPERATION	32
E. TV BROADCAST MICROPHONE OPERATIONS	34
F. OTHER ISSUES	38
PROCEDURAL MATTERS	48
ORDERING CLAUSES	58
APPENDIX A: PARTIES FILING COMMENTS IN RESPONSE TO NOTICE OF INQUIRY	
APPENDIX B: PROPOSED RULES	
APPENDIX C: INITIAL REGULATORY FLEXIBILITY ANALYSIS	

In all of its glory, the latest details from the gurus at the FCC. If you're curious for more info, and/or looking for a sleep aid, check out the entire 60-page-plus document at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-113A1.pdf.

NO GUARANTEE

The FCC is also considering setting aside one (or possibly two) TV channels for licensed wireless use in each geographic area. With good quality wireless equipment, one TV channel would support seven to 10 wireless systems, which might be adequate for many fixed installations such as houses of worship and smaller venues. However, there is no guarantee that the FCC will really do this.

In any case, the channel assigned would vary with the area, so traveling would become a continuing complication. But even one channel would cer-

tainly be better than nothing.

With so few certainties, entertainment wireless users will have no choice but to be flexible. It will also be necessary to spend the effort to keep up with the situation as it develops.

Most wireless users would prefer not to have to think about their systems at all, much less get involved in a messy political and technical situation. But to do otherwise invites failures and the possibility of expensive mistakes.

Despite the confused situation, there are some general recommendations that can be made. Keep in mind that your personal situation can vary

greatly depending upon where you live and work, and the nature and level of your wireless use.

That is, if using wireless at a small church in North Dakota, it will likely be years before there could be any serious effects. But for events in New York City, Los Angeles, Chicago, Atlanta, etc., be on the look-out for new problems by late next year. ■

Gary Stanfill has more than 30 years of experience in professional audio. He served as president and general manager of Vega, and is now principal consultant for Colmar Systems, based in Southern California. Gary can be reached at gjstanfill@earthlink.net.

Gary's Wireless Recommendations

The main impact of the unlicensed devices is likely to hit in about two years. The effects of the DTV transition are here now. It's definitely not too soon to plan ahead.

- If your current wireless systems don't have a high degree of frequency agility, budget for some that do. However, don't plan on a long service life.
- If your current systems have reasonable frequency agility and are in decent shape, do nothing for the present. This is probably not a good time to expand.
- If you really need more wireless systems in the next 18 months or so, proceed with caution. Spend the effort to research the situation so that you can (hopefully) make informed decisions. This will provide only limited protection, but it's still worth the effort.
- If traveling frequently without knowing where your gear might be specifically used, plan to buy considerably more systems than needed, and in different frequency ranges. Also, go for the best available frequency agility. This will reduce the chances of being caught out cold when arriving at a new venue.
- Just in case, brush up on wired mic techniques.
- Watch this space for further updates!
- Doomsday for wireless systems is not yet at hand. But once again, things are going to get a bit more "interesting."
- Wireless will continue to be widely used (after all, these days politicians can't campaign without them!), but the cost of gear may go up, you may need considerably more of it, and somebody you know might need to become an apprentice wireless guru.

**WE DEVELOPED OUR
NEW DIGITAL LIVE
CONSOLE WITH TWO
THINGS IN MIND.**



1

2



24
DIGITAL LIVE
CONSOLE

MACKIE.
www.mackie.com